

REMARKS

By this amendment, Claim 1 has been amended to more particularly define the solvent in the adhesion promoting primer binder as being diacetone alcohol or mixtures of diacetone alcohol with butyl acetate and/or ethyl acetate. Support for the Amendment can be found at page 7, line 26 to page 8, line 2 of the specification and in the examples at, for example, page 13, line 11 to page 14, line 22.

Reconsideration of this application, as amended, is respectfully requested.

Rejections under 35 U.S.C. § 103(a)

Claims 1-13 stand rejected under § 35 U.S.C. 103(a) as being obvious over the Plassman reference (WO 01/98393) in view of the Nissan reference (Abstract of JP 04-239 537) and U.S. Patent No. 4,409,266 to Wieczorrek et al. (hereinafter "Wieczorrek").

The present invention is directed to an adhesion promoting primer comprising a curing component and a lacquer resin which can react with isocyanate groups. As presently claimed, the curing component consists of an addition product of (i) at least one organic polyisocyanate with an average NCO functionality of 2.5 to 5.0 and an isocyanate content of 8 to 27 wt.% and (ii) an alkoxysilane of a specified formula. The solvent is diacetone alcohol or mixtures of diacetone alcohol with butyl acetate and/or ethyl acetate. The specific solvents provide good adhesion and excellent protection from haze development in the inventive adhesion promoting primer, even after intensive weathering (see the last paragraph on page 10 and the examples in the specification).

Plassman discloses two-component coating compositions having a binder component and a hardener component. The Binder component has at least one active hydrogen containing compound. The hardener component has an isocyanate functional compound and a silane oligomer. The Silane oligomer is the reaction product of the isocyanate functional compound and a coupling agent. The coupling

agent includes at least one alkoxysilane functional group, and at least one isocyanate reactive group selected from the group. The silane oligomer includes at least two free isocyanate groups.

Nissan discloses a transparent resin with improved surface scratch resistance of the surface. A primer layer is provided on the surface of a transparent resin substrate and a thin film containing at least one kind of inorganic material and amorphous carbon and having 1-5 micron film thickness is applied thereon.

Wieczorrek discloses a process for coating glass surfaces by coating the surfaces with a coating composition based on a two-component system reacting to form a polyurethane. The glass surfaces to be coated are coated before application of the coating composition with a physically drying priming lacquer containing a silane adhesion promoter and a catalyst which accelerates hardening of the coating composition and, as binder, a polyurethane polyurea which has a linear molecular structure and which is soluble in lacquer solvents.

In the present invention, Applicants sought to provide a primer for silicon-containing coatings on polymer substrates which enables good adhesion between the organic modified silicon-containing inorganic coating and the surface of the polymer substrate and which does not lead either to optical damage or to instability in the presence of water. Applicants discovered the inventive solvent-containing two-component polyurethane binders, where the solvent is diacetone alcohol or mixtures of diacetone alcohol with butyl acetate and/or ethyl acetate. The specific solvents provide good adhesion and excellent protection in the inventive adhesion promoting primer, even after intensive weathering which contain a curing component containing of an addition product of a polyisocyanate and an alkoxysilane and a lacquer resin which can react with isocyanate groups can be used as primers. As such, the inventive solvent-containing two-component system represents an ideal combination of very high adhesion between a polymer substrate and an inorganic coating and very good weather resistance. (See specification at page 2, lines 14-25, page 10, and the examples).

In order to demonstrate the benefits of the presently claimed adhesion promoting binder, Applicants submit herewith a Declaration Under 37 C.F.R. § 1.132 by Dr. Steffen Hofacker, one of the present inventors. In Dr. Hofacker's Declaration, comparative examples are shown, demonstrating that when diacetone alcohol (DAA) or mixtures of DAA and butyl and/or ethyl acetate are used in primers according to the invention, good adhesion results and that the best haze results are obtained for organic modified inorganic coatings on polymer substrates when these solvents are used. Applicants submit that these results are surprising and unexpected.

Plassman only makes a general reference to a laundry list of solvent types that can be used in the disclosed coating compositions (page 11, lines 8-11). However, "a 'laundry list' disclosure of every possible moiety does not constitute a written description of every species in a genus because it would not 'reasonably lead those skilled in the art' to any particular species." MPEP § 2163 quoting Fujikawa v. Wattanasin, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905 (Fed. Cir. 1996).

Plassman does not disclose or suggest DAA or mixtures of DAA as solvents in the specific solvents in adhesion promoting primers as in the amended claims.


Further, there is no suggestion in Plassman regarding the surprisingly good haze properties found when the solvent is DAA or mixtures of DAA and butyl acetate and/or ethyl acetate, in the inventive adhesion promoting primer. Neither of Nissan or Wieczorrek provide any mention or motivation to use DAA or mixtures containing DAA as solvents as in the amended claims. As neither of Plassman, Nissan, and/or Wieczorrek alone or in combination, provide any teaching, suggestion or motivation to use the DAA based solvents in the amended claims, the claims are not obvious over the cited references and the rejection under 35 U.S.C. 103(a) should be withdrawn.

Conclusion

The claims, as amended, are in form for allowance.

In view of the amendments and remarks presented herein, it is submitted that this application is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

By 
Gary F. Matz
Agent for Applicants
Reg. No. 45,504

Bayer Polymers LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3897
FACSIMILE PHONE NUMBER:
(412) 777-3902

/jme/GM/GM0115